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THE EFFICACY OF COMBINING COGNITIVE REMEDIATION AND NON-INVASIVE BRAIN STIMULATION. A SYSTEMATIC REVIEW

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analyses based on a sample size of 72 individuals are expected to be complete prior to presentation at SIRS 2020.

Discussion: This study is the first, to our knowledge, to target this neural region within schizophrenia for the purposes of improving visual attention and, subsequently, social cognition. Should the pattern of results from our interim analyses hold after completion of data collection, results indicate that active stimulation to the rTPJ has a unique impact on dynamic emotional stimuli, improving visual attention and accuracy in emotion recognition, suggesting a primary role of the rTPJ and visual attention in performance on this task. The intricate design of this study allows for thorough investigation of potential mechanisms by which social cognitive deficits develop, and the use of novel experimental techniques align with the theme of this year's conference.

M70. THE EFFICACY OF COMBINING COGNITIVE REMEDIATION AND NON-INVASIVE BRAIN STIMULATION. A SYSTEMATIC REVIEW

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Background: Cognitive deficits are commonly observed in people diagnosed with schizophrenia and have been found to be more predictive of future daily and community functioning than the severity of clinical symptoms (e.g., hallucinations and delusions). Cognitive remediation (CR) is a psychological treatment developed to improve cognitive functioning and thereby daily functioning. Despite the effectiveness of CR programs, reduced neuroplasticity in brain networks underlying the cognitive tasks may impede the effectiveness of these treatment programs. Increasing the neuroplasticity in these networks by the use of non-invasive brain stimulation (NIBS) like transcranial direct current stimulation or transcranial magnetic stimulation might boost the effect of CR. In a systematic review, we will address the question whether the combination of non-invasive brain stimulation and cognitive remediation may be a promising treatment strategy. We will apply a transdiagnostic perspective in order to determine the potential benefit of combining CR and NIBS in general, and not specific to a diagnostic category.

Methods: A systematic review of literature was conducted by searching PsycINFO, Pubmed, Web of Science, and Medline databases for combined treatments of CR and NIBS. Included studies were assessed for cognitive, clinical and functional outcomes.

Results: 64 studies were identified, with 40 studies including clinical populations (e.g., schizophrenia, Alzheimer's disease, HIV, MS). The cognitive outcomes showed mixed results. Most effects were found on complex attention and executive functioning. In these domains about 38% of the studies found an added positive treatment effect for combining interventions, in comparison to single interventions (i.e. CR, NIBS, or CR+sham-stimulation). Functional outcome measures were included in ten of the 40 studies with clinical populations. Eight studies found a positive trend towards greater improvements in daily functioning when CR and NIBS were combined.

Discussion: So far, findings indicate promising effects of combining CR and NIBS on cognitive functioning and daily functioning in healthy and various clinical populations. There is a lot of variety between studies (e.g., duration of treatment, number of total sessions, number of weekly sessions, cognitive domains targeted) which may explain the mixed results. Especially, the design of the CR varied widely. Strategy-use and targeting meta-cognition, which were identified as effective elements of CR as a stand-alone treatment were not included in many combined CR+NIBS designs. Future

studies have to elucidate whether the combining CR (including strategy-use and meta-cognition) and NIBS has an additive effect on cognitive and/or daily functioning compared to non-combined treatment. Moreover, future studies should evaluate whether beneficial effects from the experimental studies translate into long-term improvement in activities of daily life.

M71. THE INFLUENCE OF METACOGNITIVE CAPACITIES ON SPECIFIC NEGATIVE SYMPTOMS: A SYSTEMATIC REVIEW AND INDIVIDUAL PARTICIPANT META-ANALYSIS OF INTERVIEW-BASED DATA

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Background: Healthy metacognition involves several capacities, including the ability to integrate information about the self and others in order to formulate ways of coping with social challenges and psychological distress. Multiple studies have demonstrated that reduced general metacognitive capacity is predictive of the development and persistence of overall negative symptom burden. However, there have been no published analyses investigating how specific sub-components of metacognition influence the expression of individual negative symptoms. We aggregated individual participant data from studies reporting measures of subtypes of metacognitive functioning and examined the strength of association with specific negative symptoms.

Methods: PsycINFO, EMBASE, MEDLINE, Cochrane Library and grey literature databases were searched for eligible studies. Forwards and backwards citation searching and contacting of study authors revealed additional datasets not identified in the original search. Included studies assessed negative symptoms and metacognition using interview-based measures in participants aged 16 years or older. Selection was restricted to quantitative research, excluding case studies, and only English language publications were screened. Experimental and observational studies were screened sequentially at title, abstract and full-text level to determine whether they met search criteria. A second reviewer independently screened a proportion of records to check the reliability of inclusion/exclusion judgements (Cohen's Kappa = 0.74). Participant data and metadata of included studies were extracted and compiled combining original author and report information for all pre-specified outcomes where available. The proposed plan for the systematic review and meta-analyses was also pre-registered on PROSPERO (CRD42019130678).